Low Temperature Susceptibility of the Noncentrosymmetric Superconductor $\text{Ce}_{1-x}\text{La}_x\text{Pt}_3\text{Si}$

D.P. YOUNG, M. MOLDOVAN, X.S. WU, P.W. ADAMS, Department of Physics and Astronomy, Louisiana State University, J.Y. CHAN, Department of Chemistry, Louisiana State University — We report ac susceptibility measurements of polycrystalline $\text{Ce}_{1-x}\text{La}_x\text{Pt}_3\text{Si}$ down to 60 mK and in applied fields up to 9 T. In zero applied field, a full Meissner state emerges for pure $\text{CePt}_3\text{Si}$ at temperatures $T/T_c<0.3$, where $T_c=0.65$ K is the onset transition temperature. Though transport measurements show a relatively high upper critical field $B_{c2} \sim 4 - 5$ T, the low temperature susceptibility, $\chi'$, is quite fragile to applied field, with $\chi'$ diminishing rapidly in fields of a few kG. Interestingly, the field dependence of $\chi'$ is well described by the power law, $4\pi\chi' + 1 = (B/B_c)^{1/2}$, where $B_c$ is the field at which the onset of resistance is observed in transport measurements. The effects of La doping on the superconductivity will also be presented.